

DIELECTRIC RESONATOR DEVICE, DIELECTRIC FILTER, COMPOSITE  
DIELECTRIC FILTER, AND COMMUNICATION APPARATUS

ABSTRACT OF THE DISCLOSURE

In a dielectric resonator device, the outer shape of a support base is larger than the bottom surface of a dielectric core which is in contact with the support base, and the support base is fixed on the inner bottom surface of the cavity with support columns at the periphery of the support base. With this configuration, an air space can be provided between the inner bottom surface of the cavity and the support base. Accordingly, the resonant frequency of the TM<sub>z</sub> mode in which the electric field vector directs perpendicularly to the surface of the support base is increased so that it is considerably away from the resonant frequency of the TE<sub>01δ</sub> multiple mode.